

BOROUGH



OF KENDAL

ANNUAL REPORT

OF THE

MEDICAL-OFFICER-OF-HEALTH,

FOR THE

YEAR ENDING DECEMBER 31, 1894.

BY

ROBERT MUSGRAVE CRAVEN, D.P.H., CAMB.,

MEDICAL-OFFICER-OF-HEALTH FOR THE WESTMORLAND COMBINED
COUNTY DISTRICTS.

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BOROUGH OF KENDAL.—1894.

Table of Death-rates from All Causes, from Phthisis and Infectious Diseases, since the passing of the Registration Act, 1837.
This Tabulation was begun by the late Dr. David Page.

Year	Estimated Population June 30th	Deaths from			Annual Rate of Mortality per 1000 from				Percentage to total Deaths of Deaths from		Deaths from									Meteorology	
		All Causes	Phthisis (Consumption)	Seven principal Zymotic Diseases	All Causes	Corrected for Age and Sex distribution	Phthisis	Seven principal Zymotic Diseases	Phthisis	Seven principal Zymotic Diseases	Smallpox	Measles	Scarlet Fever	Diphtheria and Membranous Group	Whooping Cough	Typhus Fever	Typhoid Fever or Enteric Fever	Other Fevers	Diarrhoea and Dysentery	Mean Temperature of the Air	Rainfall in Inches
1838	11800	339	68	54	28.7		5.8	4.0	20.0	15.9	35	..	..	..	7	..	..	11	1	44.81	45.739
1839	11800	414	51	149	35.1	..	4.3	12.6	12.3	36.0	19	..	97	..	8	..	..	20	2	46.00	57.565
1840	11800	343	56	83	29.1	..	4.7	7.0	16.3	24.2	7	34	16	..	..	13	..	11	2	46.03	48.227
1838-40		365.3	58.3	95.3	31		4.9	7.9	16.2	25.4	20.3	11.3	37.6	..	5	5.3	..	14	1.7	45.643	50.644
1841	11800	264	48	22	22.4		4.1	1.9	18.1	8.3	..	..	4	..	14	2	..	1	1	46.17	53.854
1842	11800	268	47	34	22.8	..	4.0	2.9	17.5	12.7	..	..	5	..	..	17	..	12	..	47.01	48.072
1843	11800	286	64	26	24.2	..	5.4	2.2	22.0	9	..	..	..	..	..	12	..	4	..	46.86	56.307
1844	11800	303	37	35	26.2	..	3.0	2.9	12.0	11.3	..	22	..	..	..	7	..	2	4	45.58	43.012
1845	11800	336	52	53	28.5	..	4.4	4.5	15.5	15.7	37	..	3	..	..	6	..	4	3	45.47	53.346
1841-45		222.6	49.6	34	24.8		4.2	2.9	17.0	11.4	7.4	5.4	2.4	..	2.8	8.8	..	4.6	2.6	46.218	50.918
1846	11800	427	56	99	36.2		4.7	8.4	13.1	23.2	7	3	23	..	1	40	..	14	11	48.44	52.365
1847	11800	370	57	73	31.4	..	4.8	6.2	15.4	19.7	..	..	47	..	..	16	..	5	5	46.67	52.197
1848	11800	340	53	26	28.8	..	4.5	2.4	15.5	8.2	..	..	1	..	..	10	..	2	4	46.32	56.314
1849	11800	276	33	30	23.4	..	2.8	2.5	11.9	10.8	..	2	..	..	2	13	..	8	7	46.62	48.068
1850	11800	233	25	16	20.2	..	2.1	1.3	10.4	6.7	..	..	..	..	5	6	..	3	2	46.64	49.576
1846-50		330.4	44.8	69.2	28		3.8	4.2	13.2	13.7	1.4	2.8	14.2	..	1.6	17	..	6.4	5.8	46.938	51.704
1851	11800	310	42	57	26.2		3.5	4.8	13.5	18.3	..	6	35	..	..	5	..	4	7	46.35	47.561
1852	11900	283	27	62	23.8	..	2.2	5.2	9.5	21.9	..	..	44	..	..	9	..	2	6	47.55	65.354
1853	11900	250	38	30	21	..	3.2	2.5	15.2	12.0	..	..	5	..	12	5	..	2	5	45.56	39.455
1854	12150	243	37	20	20	..	3.1	1.7	11.1	8.2	..	..	3	..	1	1	..	3	3	46.68	46.133
1855	12000	259	23	52	21.6	..	2.4	4.3	11.2	20.1	..	34	3	..	..	11	..	1	2	45.98	34.54

NOTES TO ACCOMPANY THE BOROUGH MORTALITY TABLE.

*From all causes, Phthisis, and Infectious Diseases, since the passing of
the Registration Act, 1837.*

SMALL-POX.

1.—*Epidemic* in 1838-9. The death of a child aged 5 years occurred on the 19th January, in Stricklandgate ; but the outbreak would appear to have commenced in October, when the death of an infant, six months old, was recorded on the 7th of that month in Allhallows Lane, and to have continued until March, 1839, the last death being on March 10th, of a man aged 40, residing in Branthwaite Brow. Of the 54 deaths 16 were under 1 year, 18 between 1 and 5 years, 17 between 5 and 20 years, 3 above 20 years.

2.—*Epidemic* in 1845-46. A child aged 5 years died on February 3rd in Stricklandgate, and two other deaths occurred in March ; but the chief fatality occurred in the months of November and December, and the last death on the 3rd June, 1846. Of the 44 deaths, 8 were under 1 year, 19 between 1 and 5 years, 7 between 5 and 20 years, 10 of 20 years and upwards.

3.—Small outbreak in 1888, commencing with importation of the disease from Lancashire and Yorkshire, where it was epidemic.

MEASLES.

Epidemic in 1840, 1844, 1855, 1859, 1867, 1870, 1874, 1877, 1880, 1884, 1888, 1889, and 1892. (The epidemic in 1884, though a very extensive one indeed, causing the closure of three schools, was of a mild type ; it ran its course during the period of the enteric-fever outbreak of the same year, and ceased in the month of May).

SCARLET-FEVER.

1.—*Epidemic* in 1839-40. It commenced in May 1839, reached its height in the last week of October and the beginning of November, and subsided in February, 1840. Of the 113 deaths, 87 were below 5 years, 23 between 5 and 10 years, 3 between 10 and 20 years.

2.—*Epidemics* in 1846-47, 1851-52, 1862-63, 1867-68, and 1880. (The building of an infectious diseases hospital for the Borough was determined on after the epidemic of 1880, and was first used in September, 1882, when scarlet-fever patients were admitted).

3.—An outbreak in 1893, but of a mild type.

4.—An outbreak in 1894, again of a mild type. Commenced in the first week in July, attained its height in the week ending 13th October (twenty-two cases notified in that week), and gradually diminished, seven cases only being notified in the last fortnight in the year.

DIPHTHERIA.

The absence of any deaths certified from this disease before the year 1861 may be due to such deaths having been included under the common appellation of Croup.

1.—*Epidemic* in first two months of 1888, during and after a dense fog which hung over the town from January 8th to 20th.

WHOOPIING-COUGH.

High mortalities in the years 1841, 1853, 1858-59, 1862-63, 1870, 1872, and 1885. (The prevalence of this disease in 1885 was during the last eight months of the year. The eleven deaths were all of infants under five years of age, as also were the three deaths in 1886, and the two deaths in 1887).

FEVER.

1.—This term includes all forms of continued fever. The death-rate was almost annually heavy up to 1860; since that date there has been a very perceptible decline—(Waterworks Company in 1849; Main Sewage Works completed by end of 1873). As typhoid or enteric-fever was not distinguished from typhus-fever until 1840-41, and not generally in England before 1851, most of the deaths appearing under the column of typhus-fever may be presumed to have been typhoid or enteric-fever. The first return of death from this latter disease was in 1856, and no return of typhus-fever has been made since 1868. The death rate under typhus-fever was annually constant from 1839 to 1863; and from 1868, since when no such return has been made, the mortality from enteric-fever has been continuous, except in the years 1877, 1879, 1885 and 1892.

The *constant prevalence* of fever was greatly accentuated in the years 1839-40, 1842-43, 1846-47, 1849, and 1858. The absence of mortality under record "other fevers" since 1873, tends to the belief that such returns formerly should have been made as of enteric-fever. The decrease of mortality from fever (including typhus, enteric and others) may be gathered from the following table:—

Period of years	...	<u>1839-40</u>	<u>1841-45</u>	<u>1846-50</u>	<u>1851-55</u>	<u>1856-60</u>	
Mortality	...	58	67	117	43	47	
Periods of years	...	<u>1861-65</u>	<u>1866-70</u>	<u>1871-75</u>	<u>1876-80</u>	<u>1881-85</u>	<u>1886-90</u>
Mortality	...	29	25	23	14	29	13

2.—From January to April, 1884, inclusive, there was serious outbreak of enteric-fever, affecting solely the north end of the town, due apparently, to a curious combination of meteorological circumstances, with an inadequate ventilation of the main sewer in that district, and individual instances of faulty house-drain connections.

3.—A considerable outbreak in 1893, mainly between the middle of August and the middle of October, following a long period of exceptionally dry weather, during which the town was supplied with water from the river Mint, the amount supplied being also deficient.

DIARRHŒA.

An almost constant small annual mortality.

Exceptional. 1.—In 1846 during fatal epidemic of so-called “typhus fever.”

2.—In 1865, 1868, 1870, and in 1884, during exceptional heat in July and August. In 1884 the exceptional heat continued into September, and was accompanied by mortality.

3.—No diarrhœa mortality in the year 1888, the first time in twenty-eight consecutive years.

4.—Diarrhœa very prevalent in August and September, 1893, hot weather with showers following a very long period of drought.

CHOLERA.

No registered return. The first epidemic in this country was during 1831-32, and therefore before the passing of the Registration Act.

BOROUGH OF KENDAL.

Annual Report of the Medical-Officer-of-Health for the year ending December 31st, 1894.

The following table gives the age and sex distribution of the Borough at the Census of 1891, and also shows the distribution per thousand at age-periods, as well as a comparison of the same with England and Wales generally and the County of Westmorland as a whole.

TABLE I.

	KENDAL BOROUGH.						WESTMOR- LAND.	ENGLAND & WALES.
	Males.		Females.		Total Number of Males and Females.	Per 1000 of Popula- tion.	Proportion per 1000 of Popula- tion.	Proportion per 1000 of Popula- tion.
	No.	Per 1000 of Popula- tion.	No.	Per 1000 of Popula- tion.				
Under 5 years	877	60·77	884	61·26	1761	122·03	115·96	122·51
„ 10 „	843	58·41	853	59·11	1696	117·52	115·22	117·12
„ 15 „	756	52·39	812	56·27	1568	108·66	111·13	111·16
„ 20 „	721	49·96	791	54·81	1512	104·77	102·26	101·73
„ 25 „	564	39·08	725	50·24	1289	89·32	86·13	91·23
„ 30 „	522	36·17	641	44·42	1163	80·59	73·63	80·93
„ 35 „	450	31·18	508	35·20	958	66·38	66·22	69·89
„ 40 „	449	31·11	446	30·90	895	62·01	60·89	61·44
„ 45 „	354	24·53	403	27·92	757	52·45	53·84	53·33
„ 55 „	605	41·92	655	45·39	1260	87·31	87·88	86·02
„ 65 „	396	27·44	415	28·75	811	56·19	65·71	57·12
„ 75 „	255	17·67	312	21·62	567	39·29	43·26	34·12
„ 85 „	75	5·19	104	7·20	179	12·39	16·28	11·81
Over 85 „	8	·55	6	·41	14	·96	1·84	1·49
Total ...	6875	476·37	7555	523·50	14430	1000	1000	1000

Applying the known death rates at age periods to the known number of individuals living at each age period in the Borough, as well to males as females, and comparing this with England and Wales generally and with the County of Westmorland, it is found that the mortality figure of England and Wales being 1,000, that the Borough of Kendal is 984 and that of the County of Westmorland 1,035. In order to get a death rate, corrected for age and sex distribution for the Borough, it is therefore necessary to multiply the ascertained death rate by 1,000 and divide by 984.

BOROUGH OF KENDAL.

Area	2,622 Acres
Population (census 1891)	14,430
Inhabited Houses	2,952
Average population per house	4·88

ESTIMATE OF POPULATION.

I estimate the population on the 30th June, 1894, to be 14,680.

POPULATION	Males 6,995	} persons 14,680
(estimated June 30th)	Females 7,685	

BIRTHS	Males 200	} persons 387
... ..	Females 187	

Annual Rate of Births per 1000 of the population, 26·3.

DEATHS	Males 123	} persons 233.
... ..	Females 110	

Annual Rate of Mortality} Males 17·5	} persons 15·9
per 1,000 } Females 14·3	

But corrected for age and sex distribution, 16·1.

Excess of Registered Births over Deaths, 154.

Estimated increase of population, 77.

GENERAL MORTALITY IN 1894.

The total number of deaths registered in the year 1894 was 233. This is after deducting the deaths of non-residents who died within the Borough, and adding the deaths of those residents who died in other places. Estimating the population at 14,680, this is equal to a death-rate of 15·9 per 1,000 of the population, or corrected for age and sex distribution, 16·1 per 1,000.

ZYMOTIC MORTALITY.

The number of deaths from zymotic diseases, including diarrhœa, was 23, and this is equal to a death-rate of 1·5 per 1,000 of the population.

MORTALITY FROM PHTHISIS.

The number of deaths due to Phthisis was 18, or equal to a rate of 1·2 per 1,000.

ANALYSIS OF THE DEATH-RATE.

INFANT MORTALITY.

Of the total number of deaths, 50 or 20·6 per cent. were under one year.

The deaths of children under one year were at the rate of 129 per 1,000 births.

DEATHS OF INFANTS UNDER ONE YEAR, PER 1,000 BIRTHS.

1886-90	1891	1892	1893	1894
<u>134</u>	<u>144</u>	<u>120</u>	<u>130</u>	<u>129</u>

CHILD MORTALITY.

Sixty-seven deaths, or 28·7 per cent. of the total deaths, were of children under five years of age; being at the rate of 4·5 per 1,000 of the population.

PER-CENTAGES OF CHILDREN UNDER FIVE YEARS OF AGE TO TOTAL DEATHS.

1886-90	1891	1892	1893	1894
<u>31·6</u>	<u>30·4</u>	<u>28·5</u>	<u>35·1</u>	<u>28·7</u>

DEATH-RATES UNDER FIVE YEARS PER 1,000 OF THE POPULATION.

1886-90	1891	1892	1893	1894
<u>5·9</u>	<u>5·9</u>	<u>5·5</u>	<u>5·6</u>	<u>4·5</u>

DEATH-RATE UNDER FIVE YEARS PER 1,000 ESTIMATED TO BE LIVING AT THAT AGE-PERIOD.

1891	1892	1893	1894
<u>48·8</u>	<u>45·9</u>	<u>46·3</u>	<u>37·4</u>

The following table gives the number of deaths of children under one year and under five respectively : —

Year.	No. of deaths under one year.	No. of deaths between one and five years.
1881-85	... mean 57·4	... 31·2
1886-90	... mean 56·8	... 27
1891	... 65	... 21
1892	... 50	... 31
1893	... 56	... 26
1894	... 50	... 17

ADULT MORTALITY.

The total number of deaths between five and sixty-five years of age was 98, being at the rate of 6·6 per 1,000 of the total population, at the rate of 8·1 per 1,000 estimated to be living at that age-period, and constituting 42 per cent. of the deaths at all ages.

OLD-AGE MORTALITY.

The number of deaths of persons of sixty-five years of age and upwards was 68, being at the rate of 4·6 per 1,000 of the total population, 89·4 per 1,000 estimated to be living at that age-period, and constituting 29·1 per cent. of the deaths at all ages.

TABLE II.

1894 Quarter ending			Births Regd.	Births per 1,000 of population.	Percentage of Deaths under 1 year to		Percentage of Deaths between 1 and 5 years to		Percentage of Deaths under 5 years to	
					Total Deaths	Births	Total Deaths	Births	Total Deaths in year	Births in year
March 31	...	...	107	7.2	26.15	15.8	6.1	3.6	9.0	5.4
June 30	...	...	93	6.3	8.16	4.3	6.1	3.2	3.0	1.8
September 30	...	...	97	6.6	34.42	21.6	4.9	3.1	10.3	6.2
December 31	...	...	90	6.1	13.79	8.8	12.0	7.7	6.4	3.8
Totals	...	...	387	26.3	...	...	...	...	28.7	17.2
Means	...	...	...	...	20.63	12.6	7.2	4.4	...	...

TABLE III.

Quarterly distribution of mortality at all age-periods and from
Lung and Zymotic diseases.

Quarter Ending	Number of Deaths in each age-period						Total Deaths	Death Rate per 1000	Percentage to total deaths of Deaths from	
	under 1 year	under 5 years	under 15 years	under 25 years	under 65 years	over 65 years			Lung Disease	Zymotic Disease
March 31	17	4	2	3	18	21	65	17.7	12.3	1.5
June 30	4	3	2	4	21	15	49	13.3	10.2	4.1
September 30	21	3	4	3	17	13	61	16.6	9.8	18.0
December 31	8	7	2	1	21	19	58	15.8	6.9	15.5
Total	50	17	10	11	77	68	233	...	...	...
Means	...	...	...	...	...	...	...	15.9	9.8	9.8

TABLE IV.

Quarterly distribution of deaths from Zymotic Diseases.

Quarter	Seven Prin- cipal Zymotic Diseases.		Small- pox.		Measles.		Scarlet Fever.		Whoop- ing Cough.		Enteric Fever.		Diphtheria and Membran- ous Croup.		Diarrhoea and Dysentery.		Total.
	-5	5+	-5	5+	-5	5+	-5	5+	-5	5+	-5	5+	-5	5+	-5	5+	
March	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
June	...	2	...	...	...	...	...	...	...	...	1	...	...	...	...	1	2
September	7	4	...	...	...	...	1	1	...	...	...	...	1	...	5	3	11
December	7	2	...	...	...	...	3	1	...	...	...	...	...	...	4	1	9
Totals	14	9	...	...	...	...	3	2	1	...	2	1	...	...	9	5	23

TABLE V.

METEOROLOGY, with special Mortalities in parallel column. Observer—R. J. NELSON, Esq., Ivy Garth, Kendal.

1894.	Barometer.				Thermometer.				Prevailing Wind.	Rainfall.				Deaths from					
	Highest Reading.	Day of Month.	Lowest Reading.	Day of Month.	Mean Reading.	Day of Month.	Lowest Reading.	Day of Month.		Mean Reading.	No. of days on which 32° or less has been registered	Total.	Maximum fall registered by 5 in. gauge.	Day of Month.	No. of days on which 1 or in. or more fell.	All Causes.	Phthisis and Lung Disease.	Zymotic Disease.	Nature of Zymotic Disease.
January ..	30'400	3	29'0	20	29'519	48	12	6	36'205	14	SW	5'51	'65	26	25	21	4	0	Enteric Fever
February..	30'250	19	29'250	26	29'728	46	21	19	37'5	9	SW	9'30	1'0	10	23	26	5	0	
March ..	30'250	24	28'750	13	29'667	69	25	15	41'29	14	N	4'06	'900	5	13	18	4	1	Enteric Fever and Diarrhoea
April ..	30'000	20	29'200	17	29'673	70	32	20	50'683	1	E	1'71	'50	12	15	21	4	2	
May ..	30'200	24	29'350	29	29'748	70	30	22	49'080	5	NE	3'74	'60	30	19	14	3	0	
June ..	30'250	30	29'500	2	29'700	89	37	7	50'555	..	SW	3'25	'55	4	18	14	1	0	S. F. and Diarrhoea
July ..	30'200	1	29'150	12	29'679	89	45	4	62'020	..	N	3'55	1'300	9	12	18	4	3	
August ..	30'050	30	29'100	15	29'680	71	41	22	56'967	..	SW	4'83	1'280	2	18	26	3	5	Whooping Cough & Diarrhoea
September	30'300	30	29'700	23	29'986	75	34	28	54'333	..	NE	'33	'170	5	5	17	2	3	
October ..	30'400	2	28'600	25	29'755	62	23	22	46'29	2	SW	4'42	'85	24	16	26	6	6	S. F. and Diarrhoea
November	30'250	30	28'700	14	29'653	60	31	30	45'08	3	SW	6'30	'93	13	21	10	1	2	
December	30'400	27	28'600	22	29'705	28	23	4	38'50	10	SW	7'11	1'36	21	13	22	5	1	Scarlet Fever
Total ..	..	..	..	..	..	..	..	..	..	58	..	54'11	..	..	198	233	42	23
Means ..	30'245	..	29'075	..	29'711	64	29	..	47'375	..	..	..	..	..	..	..	..	..

BIRTH-RATE.

The total number of births registered was 387 against 429 in the previous year, and the birth-rate was therefore 26·3 per thousand of the estimated population.

The births and birth-rates have been as follows : —

Year.		Births.		Birth-Rates.
1881-85	...	mean 455	.	32·8
1886-90	...	mean 422	...	29·6
1891	...	449	...	31·1
1892	...	415	...	28·5
1893	...	429	...	29·2
1894	...	387	...	26·3

POPULATION.—My present estimate of the population is based on the assumption that it has increased during the past year at the same rate as it did in the 10 years ending 1891—the census year.

GENERAL MORTALITY.—The general mortality of the past year—233 deaths—is precisely the same as in the previous year. The rate of mortality in the last and previous year—15·9 per 1,000—is the lowest recorded in the Borough for upwards of half a century.

ZYMOTIC MORTALITY.—The Zymotic mortality—23 deaths—is distinctly higher than the mean of the ten years ending 1890; in the last 13 years it has been exceeded four times, namely, in 1884, 1889, 1892, and 1893. Still the Zymotic rate of mortality—1·5 per 1,000 of the population—is not a high one.

MORTALITY FROM PHTHISIS.—The mortality due to Phthisis is again low, namely, 19 deaths. Only in three years out of the last 50 has it been so low. The rate of mortality was 1·2 per 1,000 of the population.

ANALYSIS OF THE DEATH-RATE.

INFANT MORTALITY.—The infant mortality shows a decrease, but on account of the decrease in the birth-rate, the proportion of deaths of children under one year to the number of births registered does not show a corresponding decrease.

CHILD MORTALITY.—In the child mortality—deaths of all children under five years—there is a marked decrease. Whilst the mean rate of the five years ending 1890, was 5·9 per 1,000 of the population, and never below 5·5 in the three next succeeding years, the rate of the past year was only 4·5 per 1,000 of the population.

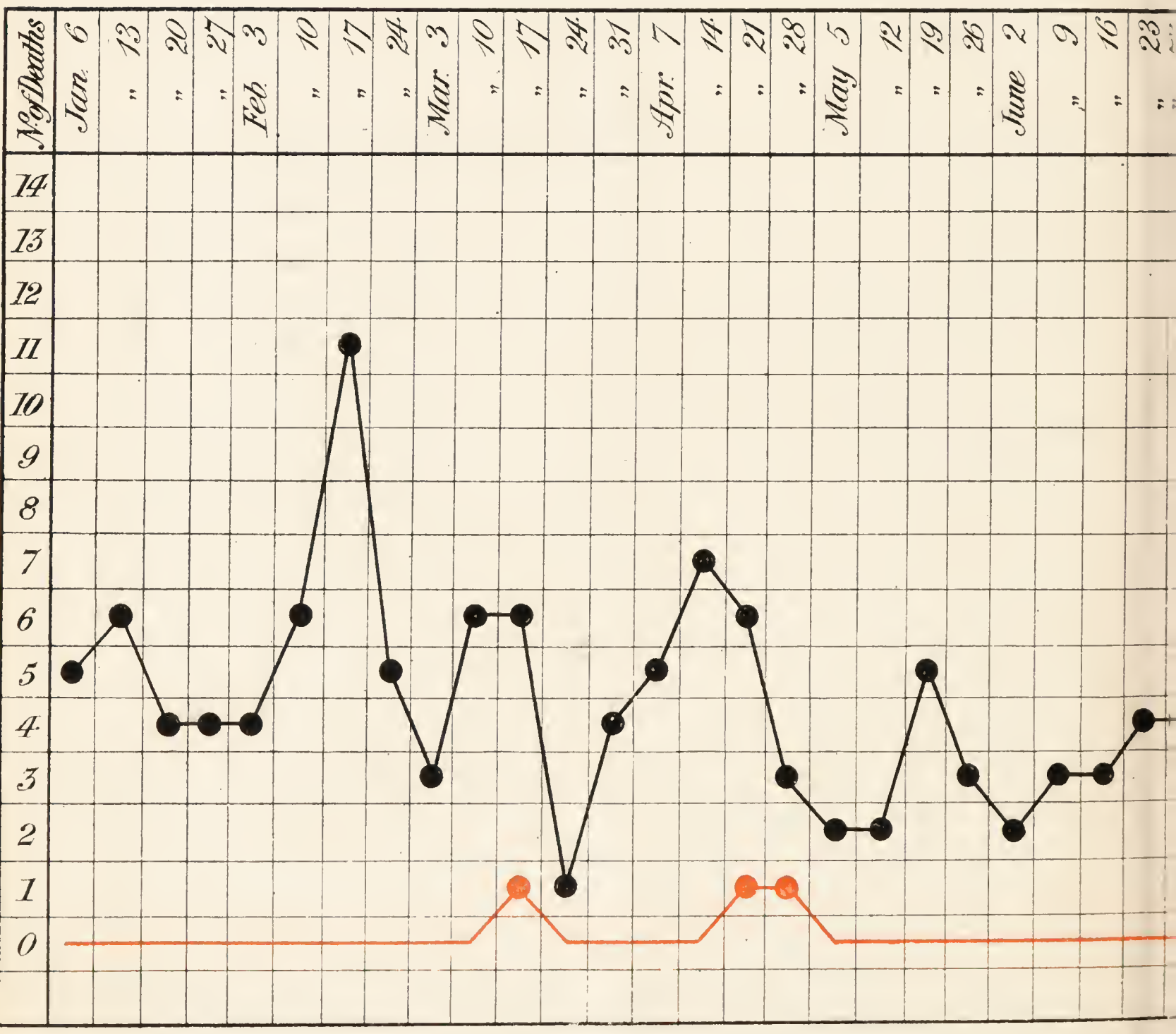
ADULT MORTALITY.—The adult mortality has increased from the abnormally low figure of the year 1893, and is now 8·1 per 1,000 estimated to be living at that age-period.

OLD-AGE MORTALITY.—This mortality has also slightly increased, and the rate is 89·4 per 1,000 estimated to be living at that age-period.

B O R O U G H

1894 — DEATHS

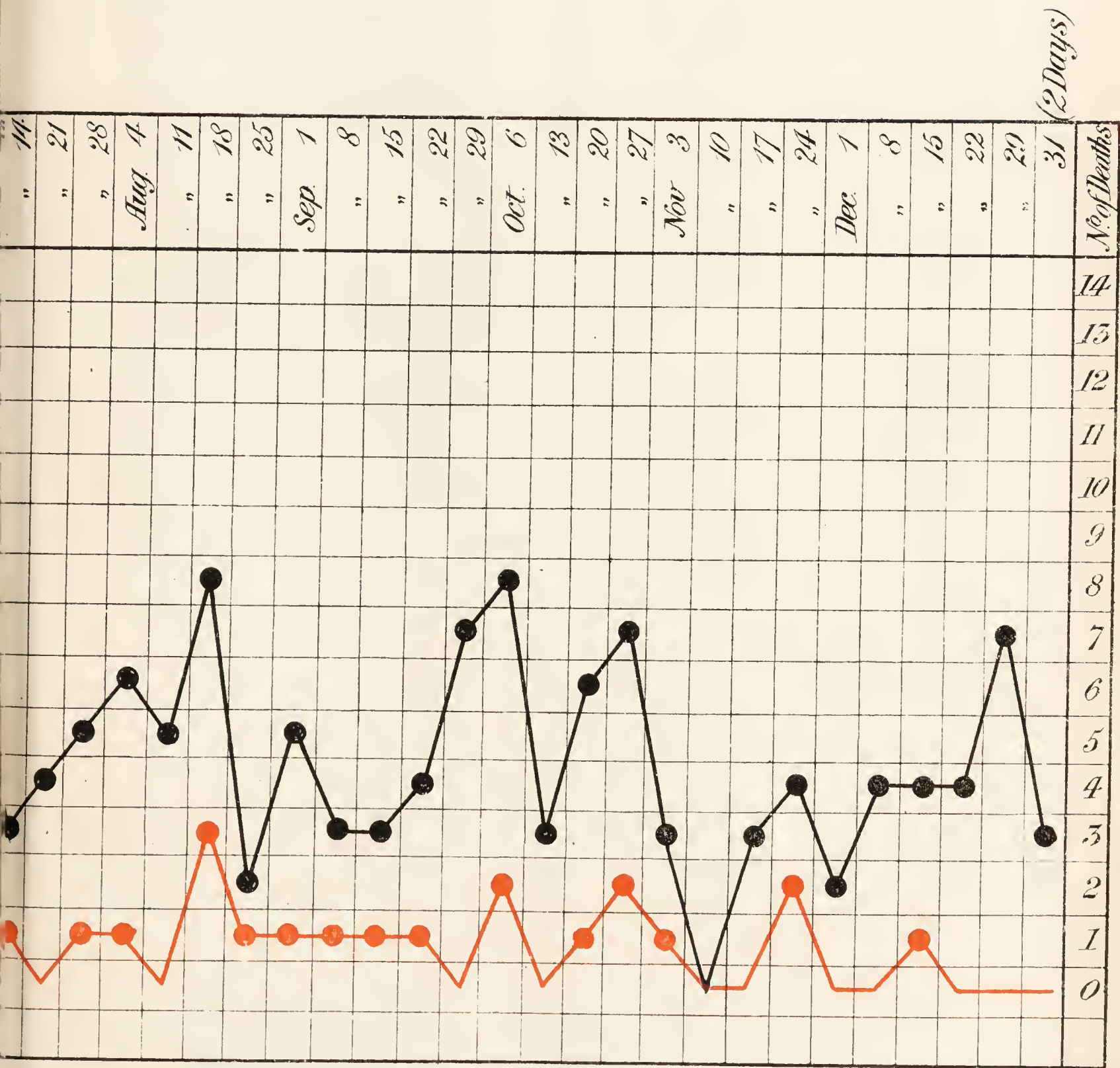
Black Ink indicates TOTAL DEATHS from all



F + K E N D A L.

EACH · WEEK.

38. ——— Red Ink indicates ZYMOTIC Deaths. ———



By reference to Table II. on page 11 it will be seen that the proportion of deaths of children under one year in the March quarter was excessive. This was due to an unusual number of deaths of children who were in a delicate state of health from birth—malformation and the like. In the September quarter there was the usual excess of deaths of young children, due to diarrhoea, but it was not by any means so marked as in former years. Given a comparatively cool summer, and a vigorous removal of filth from the vicinity of the homes of the working classes, we naturally expect a saving of infant life. In the December quarter there was also an increased proportion of deaths of children, in this case due to diarrhoea and scarlet fever.

Table IV. on page 11 shows the number of deaths in each quarter from Zymotic diseases. The increase in the number of deaths from Scarlet Fever was coincident with the marked spread of that disease, which, as will be seen by reference to the diagram following page 16, took place the first week in July, and attained its maximum height during the second week in October.

Table V. gives the Meteorological Statistics of the year. The total rainfall was above the average of 50 years, by 5·3 inches, though that of the months of April and September—particularly the latter—was very low. In February, November, and December the fall was very heavy. August also was a wet month. The low mean temperature of the month of August was a material factor in keeping down the annual mortality from diarrhoea, which marks that month as a rule. The mean reading of the thermometer for the year was 47·375 as against 50·184 in 1893, notwithstanding that the months of January and November were decidedly warmer than usual.

DIARRHOEA.—Of the fourteen deaths from Diarrhoea, four were persons between 51 and 88 years of age; one was five years of age, another three, and the remaining eight were all infants. The whole of the ten children were of the working class parentage, and resided in yards or where the population is most dense, or the property of a low class, for example Syke Lane, High Fellside, Stramongate, and yards in Highgate. The great majority of them were in August, September, and October. One death was in a house in yard 149, Highgate, where there is a wall about 25 feet high in front of the house and distant about 7 feet away in a southerly direction, so that no direct sunlight can get into the premises; at the other side of the house—in yard No. 145—and at a distance of 10 feet from the back window there is an uncovered ashpit and two privies. These should be converted into water closets of some description.

BIRTH-RATE.—The Birth-Rate—26·3 per 1,000—was lower, with one exception, than any year since 1881; lower by 6·5 per 1,000 than the mean of the five years ending 1885, and lower by 3·3 per 1,000 than the mean of the five years ending 1890.

INFECTIOUS DISEASE.

The total number of cases of infectious disease notified to me under the provisions of the Infectious Disease (Notification) Act, 1889, or discovered by me, not notified, was 311, as against 284 in 1893, which was a higher number than the totals of the three previous years put together. Table VII. shows the number of known cases of each infectious disease in each quarter of the year, the number removed to the Sanatorium and to the Memorial Hospital, the number treated at their own homes, and the number of deaths.

TABLE VII.—SCARLET FEVER.

Quarter.	Known Cases.			Admitted to Sanatorium.		Treated at Home.		Deaths.	
March	...	22	...	...	15	...	7	...	0
June	...	8	..	...	5	...	3	...	0
September	...	96	...	...	66	...	30	..	1
December	...	110	...	...	67	...	43	...	4
Total		235			153		83		5

DIPHTHERIA AND MEMBRANOUS CROUP.

Quarter.	Known Cases.			Admitted to Sanatorium.		Admitted to Memorial Hospital.		Treated at Home.		Deaths	
March	...	0	...	0	...	0	...	0	...	0	0
June	...	7	...	0	...	0	...	7	...	1	1
September	...	1	...	0	...	0	...	1	...	0	0
December	...	2	...	0	...	0	..	2	...	0	0
Total		10		0		0		10		1	1

TYPHOID OR ENTERIC-FEVER.

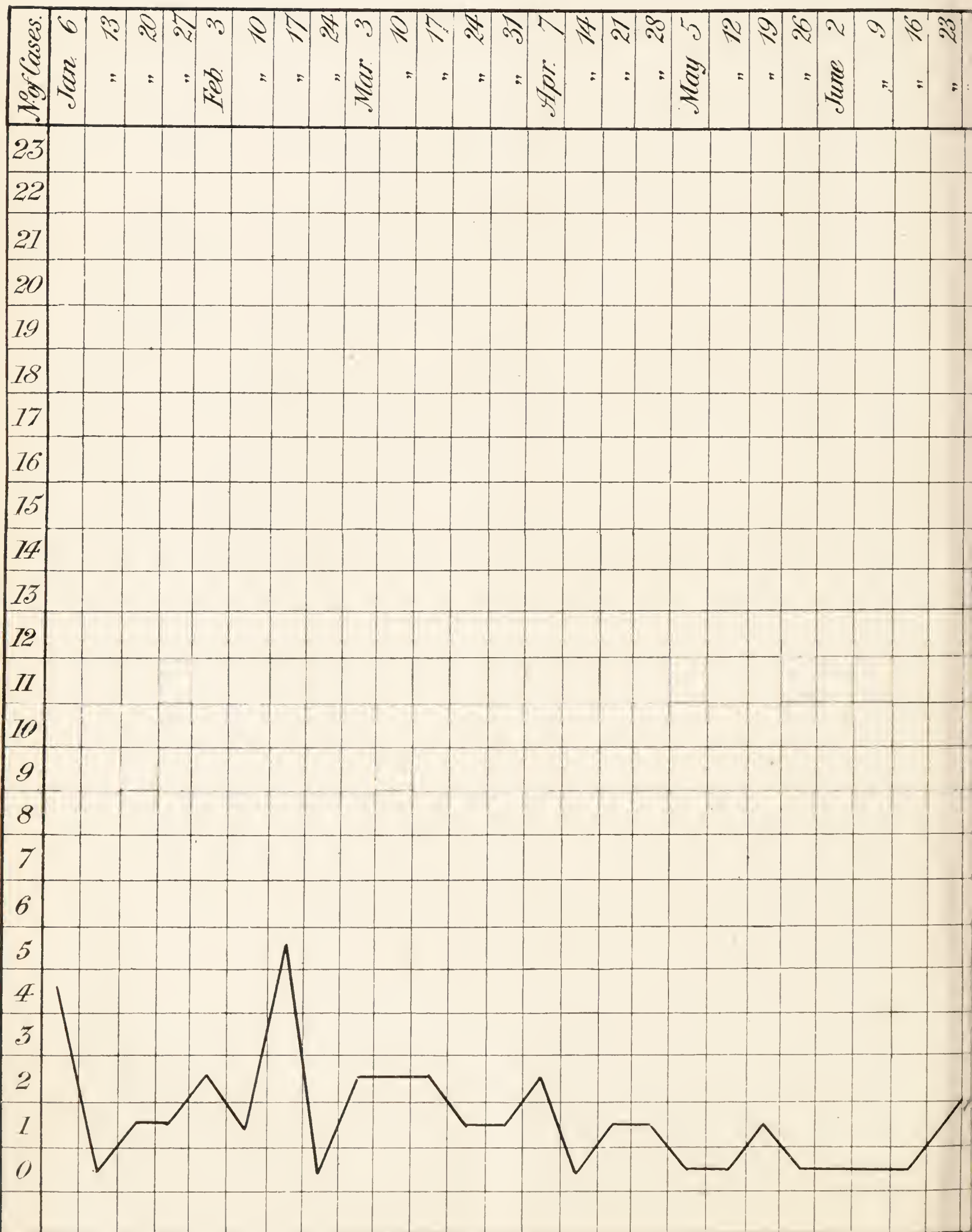
March	...	3	...	0	...	2	...	1	...	1	1
June	...	1	...	0	...	0	...	1	...	1	1
September	...	4	...	0	...	2	...	2	...	0	0
December	...	2	...	0	...	0	...	2	...	0	0
Total		10		0		4		6		2	2

ERYSIPELAS.

March	...	13	...	0	...	0	...	13	...	1	1
June	...	8	...	0	...	0	...	8	...	0	0
September	...	13	...	0	..	0	...	13	...	0	0
December	...	16	...	0	...	0	...	16	...	1	1
Total		50		0		0		50		2	2

Table VIII. shows the number of known cases of infectious disease in each of the past four years; the Infectious Disease (Notification) Act, 1889, coming into operation in the Borough on the 10th of March 1890.

WEEKLY NOTIFICATIONS OF



SCARLET FEVER IN 1894.

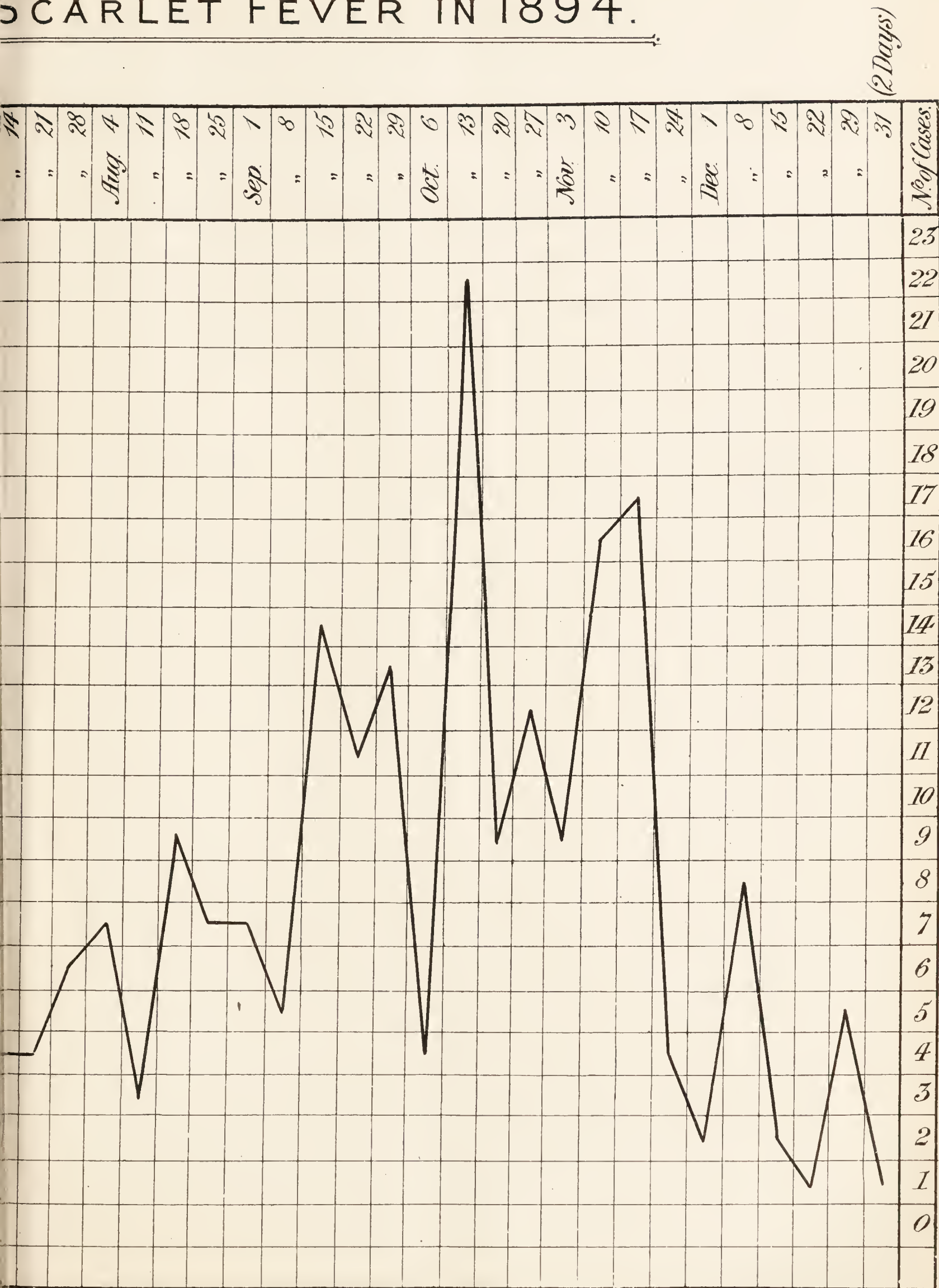


TABLE VIII.

Year.	Smallpox	Scarlet Fever.	Diph- theria and Mem- branous Croup.	Enteric Fever	Con- tinued Fever	Ery- sipelas	Puer- peral Fever	Total
1890	0	10	10	22	1	13	0	56
1891	0	41	5	39	1	23	2	111
1892	0	32	2	29	5	26	2	96
1893	2	186	3	51	4	36	2	284
1894	0	236	10	10	1	50	4	311

The whole of the known cases in 1890, except two, were subsequent to the adoption of the Notification Act.

SCARLET FEVER.

By reference to the diagram following page ¹⁶~~17~~, it will be seen that from the 1st of January to the 30th of June only 30 cases were notified. After the latter date the weekly number of cases rose more or less gradually till the week ending the 13th of October, in which 22 cases were notified ; from that date the number gradually diminished, seven cases only being notified in the last seventeen days of the year. From the quarterly report of the Medical Officer to the County Council of Lancashire, I find that the disease was generally prevalent in Lancashire at the same time as it was here, reaching its maximum height in that county in the month of October. Coming nearer home, I find that the notified cases in the Ulverston Rural Sanitary District in the several quarters of the past year were respectively 7, 12, 14 and 29—again the maximum being reached in the last quarter of the year. With such a general prevalence of the disease in adjoining districts, it is no wonder that it should be spread in an important market town like Kendal. The number of notified cases was so great in the months of September and October, that it was not possible to find room for them in the Sanatorium, and herein is one probable cause of the extension of the disease ; in several cases the parents did not know that their children were suffering from Scarlet-Fever until desquamation commenced, and a medical man was called in to see the patient. On the 24th of July last I made a special report to the Corporation in regard to a child whom I found in Kendal Green School, on the 9th of July, suffering from Scarlet Fever.—L.G.B., 77624-K2-94.

DIPHTHERIA.

Of Diphtheria and Membranous Croup, ten cases were notified affecting seven houses. In every affected house, with one exception, insanitary conditions were found to exist ; for example (1) privy adjoining house, and gully trap defective ; (2) drains defective, pan closet in house, soil pipe inside house walls, drains defective ; (3) gulley trap blocked

up and liquid filth soaking into foundations of house ; (4) privies used by the tenants of nine houses in one block in a confined yard ; (5) three privies used by seven tenants in a close confined yard, and distant only three feet from the window of nearest house ; (6) a block of four privies used by the tenants of twelve houses, and distant only six feet from the nearest house wall.

ENTERIC FEVER.

Ten cases of Enteric Fever have been notified during the past year. Three of them were in one house, in Bishop Blaize Yard, Highgate, where a most foul ashpit and privies adjoining are used by the tenants of twelve houses ; one was in a house in Stricklandgate, where there is a water-closet in the centre of the house, without either light or ventilation, except such as is obtained from a comparatively dark staircase which has no window into it, capable of being opened ; one was in a yard in Highgate, where the water supply is derived from a well in the yard, the surface of which is paved with boulder stones, and therefore liable to pollution ; one was in Castle Street, where a foul privy was situated near to the house ; other cases were in Highgate, Park Street, Stramongate, and Queen Street.

WATER SUPPLY.

On the 20th of July last the Royal Assent was given to the " Kendal Corporation Gas and Water Act, 1894 "—57 and 58 Vict. ch. lxxviii. By that statute the Corporation acquired the Undertaking of the Kendal Union Gas and Water Company, the purchase being completed on the 20th of August, 1894. Since the completion of the purchase the Corporation has detected and removed a considerable number of leaks in the mains, and has thereby improved the supply of water to the town, but there still remains much to be done on the premises of the consumers before waste is properly checked. Until this is done the mains cannot possibly convey the amount of water which the whole body of consumers would use or waste, and consequently those persons who live in the higher parts of the town get no supply whatever, at certain times, for many hours together. I am quite within the mark in saying that not one water closet in twenty has its fittings so constructed as to prevent waste. Many of the service pipes are laid so near to the surface of the ground, or are so badly carried into the houses that in time of frost they freeze up, and leave the consumers without supply. All taps outside houses—for the supply of water in yards should be absolutely prohibited. The powers which the Corporation possesses in these matters, but which were not possessed by their predecessors, are amply sufficient to prevent waste.

LOCAL GOVERNMENT BOARD—CHOLERA SURVEY.

On Friday the 9th of March, Dr. Wilfred W. E. Fletcher, one of the Medical Inspectors of the Local Government Board had a conference with certain members of the Health Committee, and then proceeded to

make his inspection of the Borough. At a Special Meeting of the Corporation held on Saturday, the 16th of June following, Dr. Fletcher attended in order to confer with the Sanitary Authority on the results of his inspection of the district, and to advise them as to the measures to be adopted for dealing with Cholera, or other Infectious Disease. He presented the following : —

Memoranda of Recommendations made to the Kendal Urban Sanitary Authority as regards measures to be taken with a view to dealing with Cholera and other dangerous Infectious Diseases.

A.—GENERAL DUTIES UNDER THE PUBLIC HEALTH ACTS.

1. *Excrement Disposal.*

The attention of the Sanitary Authority should be directed to the serious danger to health arising from the defective structure of privies and privy-middens in the district, which as at present constructed are a grave source of nuisance, and cannot fail to be injurious to health, and also to the nuisance arising from their inefficient scavenging. All privies and privy-middens causing nuisance should be efficiently dealt with as such. If fixed receptacles for excrement be retained, they should be reduced to the smallest practical dimensions, and so constructed as to keep out all unnecessary moisture and facilitate the mingling of ashes with the excrement. The removal of night-soil, ashes, &c. should be more systematically attended to.

The use of water-closets of the kind known as pan closets with D traps and containers should be discontinued. Soil-pipes should be placed outside the dwellings, and should in all instances be ventilated.

2. *Inspection of Nuisances.*

The inspection of nuisances should be carried out thoroughly and systematically throughout the district in accordance with section 92 of the Public Health Act, 1875. Nuisances should be *sought out*, and the provisions of the Public Health Act for their repression should be enforced independently of complaints from inhabitants.

3. *Condition of Dwellings.*

The Authority should cause all dwellings which, from dampness, want of ventilation, dilapidation, or other structural defects, are unfit for habitation to be placed in proper repair or permanently closed. Any houses which are in an unwholesome condition through want of lime-washing, or proper cleansing, should be dealt with under section 46 of the Public Health Act, 1875.

4. *Dairies and Cowsheds, &c.*

The Sanitary Authority should without any further delay adopt and enforce regulations with respect to Dairies, Cowsheds, and Milkshops. The Cowsheds should be put in good order, and frequently inspected in order to prevent overcrowding.

5. *Lodging Houses.*

The Common Lodging Houses should be more frequently inspected with a view to the early detection and abatement of nuisances, the prevention of overcrowding, and the enforcement of cleanliness.

6. *Bye-Laws.*

The Sanitary Authority should without delay, undertake the revision of their Bye-Laws, and should, so far as the special circumstances of their district admit, base their new code on the Model Bye-Laws of the Local Government Board.

B. SPECIAL DUTIES OF THE SANITARY AUTHORITY AS REGARDS CHOLERA.

In view of the possible recrudescence of Cholera in Westmorland during the present year, the Sanitary Authority will do well to consider beforehand the precautions necessary in dealing with such cases of the disease as may be brought to, or occur within their district.

In the first instance, arrangement should be made for the earliest possible intimation of the occurrence of cases of choleraic illness or diarrhoea being given to the Medical Officer of Health.

And, secondly, in dealing with actual occurrences of such illness, the provisions of the Public Health Act, 1875, relating to infection, should be very strictly carried out in accordance with the Board's Memorandum of August 26th, 1892.

Measures thus taken should comprise the early isolation of persons attacked; the disinfecting and lime-washing of infected rooms and premises, including the removal, after thorough disinfection, of all bowel and other discharges of the sick, and the repeated disinfection and flushing of house drains and yards. Infected clothing and bedding should be at once destroyed, or very efficiently disinfected.

At the same time a house-to-house visitation in the immediate neighbourhood should be made for the purpose of discovering and promptly dealing with further cases of similar illness.

Instructions should be issued throughout the district that all water not derived from a source of undoubted purity, should be well boiled before being used for drinking or cooking purposes.

In every instance, disinfectants, accompanied with precise instructions for use, should be supplied by the Sanitary Authority under the personal supervision of the Medical Officer of Health.

Dr. Fletcher pointed out the importance of having a good water supply as it had been proved time after time that the origin of infectious disease had been impure water supplies. He wished to draw attention to the unsatisfactory supply from the River Mint, which he thought was not a proper source to resort to. The fact that they were pumping some 30 gallons per head per day from the well near the river, showed that there was something wrong with the water system. There seemed to be a great leakage or an unnecessary waste of water by the inhabitants, because that quantity itself, irrespective of any other source, should be

sufficient to supply the whole of the people of Kendal. If they were wise they would take care that the water supply was of good quality, and of the two rivers the Sprint was undoubtedly the best because it was subject to less pollution. Then, again, Kendal was an old town, and many of the houses were hardly fit for habitation ; they were closely packed together, no free ventilation, surroundings unhealthy, and the ground polluted with filth, and many other places needed attention. A number of houses should be pulled down. He commented on the drains, and stated that in some houses they were made to empty over gully traps in such a position that when the traps became choked up there was great difficulty in getting them cleaned out. The position of the traps should be altered so that they could be expeditiously cleansed. With regard to their lodging-houses, they were not model ones—one especially, where a great amount of filth, &c., existed. With regard to cowsheds he said he had only visited one in the district, which was in a very unsatisfactory state. It contained 22 cows and one goat, and the atmosphere was hot and foul. The place was closely shut up, and there was a want of ventilation and drainage required. Then as to the scavenging of the town it was not efficiently carried out. From the Medical Officer's Report, the amount taken out of the ashpits showed that they were not cleaned often enough. They should employ more labourers to carry out this work. The Local Government Board thought they should be emptied once a week. He pointed out the advisability of reducing the size of their ashpits, which would be more in accordance with attainment to a healthy state of things. In respect of typhoid fever, he said much was due to defective drains. It might not seem very striking to have 51 cases in one year in the town, but it was a large number in proportion to the population. He gathered from the report that there had been 23 cases in 1890, 39 in 1891, 29 in 1892, and 51 in 1893. He said it was best to be very careful in the matter of infectious diseases, and it was the best plan, even if there was a doubt about it, to isolate persons who had contracted a semblance of the disease, so as to remove risk of infection. The Inspector then called attention to the Bye-Laws, and stated that they were in need of revision as the old ones were inadequate. In conclusion he thanked them for their attention during the meeting.

At the meeting of the Council held on the 26th June, a Committee, consisting of the Mayor and others were appointed "to take into consideration the question of preparing new Bye-Laws, and to report." The report of this Committee has not yet been laid before the Council, but I trust it may be at an early date, as not only the Council, but also their Officers, are greatly handicapped by the want of clear and adequate conditions to be fulfilled. In the matter of new buildings, the want of modern Bye-Laws is greatly to be regretted. Not only the powers conferred by the Public Health Act, 1875, but also those contained in the Public Health Acts Amendment Acts, 1890, should be exercised.

The Health Committee having appointed four Sub-Committees for

that purpose, each one visited certain large blocks of privies and privy-middens in yards and other confined localities, and reported to the Committee that something like ninety such privies ought to be converted to the water-carriage system, as soon as the Corporation had sufficient water at its disposal for the purpose.

A considerable number of such privies might at the present time be converted to the waste water closet system, which has many advantages, not the least of which is that the whole of the water apparatus being below the level of the ground, it is protected from frost, and thereby is enabled to act efficiently when other forms of water closet are frozen up. Another advantage, implied by its name, is that it is only "waste" and not pure water that is required—water which has already performed its domestic purpose, but is still quite good enough to carry away excreta from a closet. Possibly the greatest advantage of all—outside that of the landlord, that it is a very cheaply constructed form of closet—is that it is entirely automatic, for no ignorant person can neglect to do any act required to cause it to work efficiently.

ABATEMENT OF NUISANCES.

In this matter the Inspector of Nuisances and Borough Surveyor reports as follows :—

Description of Nuisances	Total No. of Nuisances
Ashpits and privies foul and out of repair, not roofed	... 53
Ashpits and privies against house walls ...	... 14
Pigs kept so as to be a nuisance ...	... 5
Insufficient water-closet or privy accommodation ...	... 6
Drains choked up, leaking or leaking through house walls	... 24
Accumulation of Manure ...	... 3
Slopstone pipe connected with drain ...	... 3
Water-closets with insufficient water supply ...	... 13
Houses declared unfit for habitation ...	... 0
Overcrowding ...	... 3
Canal Boats Inspected ...	... 15
New water supply or improvements in old supplies	... 2
Houses disinfected after infectious disease ...	... 230
Articles disinfected in disinfecting stove ...	... 2300

NO. OF DRAINS TESTED WITH SMOKE TESTER.

Month	Tested, laid, or re-laid			Places where tested, &c.
January	..	1	...	16, Finkle Street.
February	...	3	...	Parkside Road, 18, yard 49, Highgate, Union Tavern, Highfield Villas.
March	...	5	..	Dr. Iliffe's, Co-operative Society's Houses, Gillingate, 18, yard 35, Highgate, 17, Park Street, 29, Lowther Street.
April	...	5	...	Cottages belonging Mrs. Braithwaite, in Captain French Lane; Wm. Glasgow, Lowther Street; Mr. Rimmer, Stramongate; 25, Park Avenue, 35, Aynam Road.
May	...	1	...	5, Aynam Place.
June	...	4	...	6, New Bank Yard, 37, 39, and 41, House of Correction Hill, Orlig Bank, Messrs. Howie and Hutchinson, Gillingate.
July	...	3	...	9, Allhallows Lane, 35, Aynam Road, Prospect Villa.
August	...	2	...	12, House of Correction Hill, Kidd's Yard, Highgate.
September	...	2	...	New Bank Yard, No 4, Taylor's Yard, Highgate.
October	...	1	...	Mr. Ruthven, Kendal Green.
November	...	0	...	
December	...	0	...	

EXCREMENT DISPOSAL.

Month	Middens emptied.			Loads of Dry Ashes	Loads of Nightsoil and garbage			Total Loads
January	...	104	...	191	...	140	...	331
February	...	140	...	225	...	164	...	389
March	...	282	...	285	...	249	...	534
April	...	154	...	236	...	195	...	431
May	...	249	...	366	...	317	...	683
June	...	180	...	263	...	241	...	504
July...	...	250	...	426	...	286	...	712
August	...	160	...	200	...	187	...	387
September	...	146	...	184	...	168	...	352
October	...	196	...	260	...	224	...	484
November	...	142	...	197	...	135	...	332
December	...	120	...	142	...	93	...	235
Totals	...	2123		2975		2399		5374

In addition to the above, 350 ashpails have been emptied twice in each week throughout the year, and have produced 2116 loads of dry ashes.

Comparing this statement with previous years I find :—

Year		Loads of Nightsoil		Total Loads		Percentage of Nightsoil to Total Loads
1885	...	2105	...	3428	...	61
1886	...	1996	...	3325	...	60
1887	...	1749	...	3456	...	50
1888	...	1712	...	3576	...	47
1889	...	1465	...	3442	...	42
1890	...	1824	...	3923	...	46
1891	...	1970	...	4366	...	45
1892	...	1598	...	5567	...	28
1893	...	2441	...	7362	...	33
1894	...	2399	...	7490	...	32

SANATORIUM.

There were fourteen patients in residence in the Sanatorium on the night of December 31st, 1893; one hundred and seventy were admitted during the year, 1894, and of these twelve remained under treatment on the 31st of December. Of the one hundred and seventy cases admitted—all Scarlet Fever—fifteen were from the district of the Kendal Union Rural Sanitary Authority, and one from the Local Board District of Windermere.

The following table shows the number of patients admitted; the number of “patients’ days,” and the mean number of patients in residence *in each month* :—

1894 Month	Number of Patients Admitted		Number of “Patients’ Days.”		Mean number of Patients in Residence
Prior to January 1st	14)			
January	5 (2R)	}	277†	...	8·9
February	7		219†	...	7·8
March	7 (2R)		381	...	12·2
April	9 (7R)		345	...	15·5
May	2 (2R)		268	...	8·6
June	4 (1W)		182	...	4·4
July	19		361	...	11·3
August	16		805	...	25·9
September	30		974	...	32·4
October	34		1299	...	41·9
November	25		1498	...	49·9
December	12 (2R)		821	...	23·2
		170 (15R) (1W)	7372		14·1

† Includes cases admitted prior to 1st January.

A great difficulty was formerly experienced in persuading parents to allow their children to be taken to the Sanatorium, but this has been removed to a very large extent by a resolution passed by the Council on the 24th of April last, which provided that any person coming from a house in the Borough, the rateable value of which was under £10, should not be charged for maintenance. Out of 134 patients admitted from the Borough, in the last six months of the year, 24 resided in houses of over £10 rateable value.

SLAUGHTER HOUSES.

The one private Slaughter House in the Borough continues to be exceedingly well kept. The Public Slaughter House is also well kept; the Caretaker of the Corporation is vigilant to prevent unsound meat passing out of the premises, and has on several occasions detained suspicious carcasses for my inspection.

The Factories and Workshops, and the Dairies and Cowsheds have been inspected by the Inspector of Nuisances.

MUSGRAVE CRAVEN, D.P.H., Camb.,

Medical-Officer-of-Health.

Kendal, 27th February, 1895.

